MODIFICATION OF NERVE CONDUCTION IN THE RAT BY BREVETOXIN (PBTX-3). *Memoirs of the Queensland Museum 34(3): 586. 1994*:– Brevetoxins are lipid-soluble polycyclic ether toxins isolated from the marine dinoflagellate *Ptychodiscus brevis*. The toxins PbTx-2 and PbTx-3 bind to a specific receptor site (site 5) on the voltage-dependent sodium channel, a site shared with ciguatoxin. This study set out to examine the effects of PbTx-3 and a possible antagonist on the parameters of nerve conduction.

Electrophysiological studies were carried out on the ventral coccygeal nerve of male Wistar rats. Prior to experimentation each animal was anaesthetised with intramuscular Leptan (420µl/kg). A Medelec MS92a electromyography unit was used for recordings. PbTx-3 (15µg/kg) was administered intravenously over 15 minutes. In antagonist experiments lignocaine (500µg/kg) was delivered intravenously, over 30 minutes.

PbTx-3 produced a significant increase in both the magnitude and duration of supernormality to that of control nerves. This toxin also increased the absolute and relative refractory periods and decreased the conduction velocity. Lignocaine returned these parameters towards control values.

These results demonstrate that PbTx-3 alters nerve conduction parameters of rats in a similar way to ciguatoxin. It is suggested that brevetoxin may provide a suitable model in further studies pertaining to possible therapeutic agents for ciguatera poisoning.

Christine E. Purcell, John Cameron & Michael F. Capra, School of Life Science, Queensland University of Technology, GPO Box 2434, Brisbane 4001, Queensland; 12 April, 1994.

CIGUATERA RESEARCH - AN HISTORICAL PERSPECTIVE. *Memoirs of the Queensland Museum 34(3): 586. 1994*:– Ciguatera research at the University of Hawaii was initiated in the mid-1950's by the late Professor A.H. Banner, who formulated four principal objectives: 1, What is the molecular structure of the toxin? 2, What is the origin of the toxin? 3, Can a diagnostic test be devised that distinguishes toxic from nontoxic fish? 4, Can an effective human therapy be found?

Elucidation of the molecular structure was of central concern since success with the other three goals would be greatly enhanced, or depend on, a knowledge of structural features.

Inadequate supplies of toxic fish, establishment of a suitable bioassay, and technology of the 60's made for slow progress. Even after the discovery of a dinoflagellate as the primary toxin producer in 1977, moray eels had to remain the sole source of toxin, since *G. toxicus* cultures yielded only the water-soluble maitotoxin, which was distinctly different from the lipid-soluble ciguatoxin extracted from carnivorous fish.

While an extensive search for an algal food source or a toxin precursor produced no useful leads, it gave rise to significant discoveries, most prominent among them of palytoxin, which in time became a benchmark in marine natural product chemistry, and indeed, in all of organic chemistry.

The first clue that ciguatoxin belonged to the structural type of polyethers did not come from sophisticated instrumentation, but from its behaviour in chromatography which paralleled that of okadaic acid, a compound first isolated and characterized as a constituent of a sponge and subsequently identified as a metabolite of the dinoflagellate *Prorocentrum lima*. Interestingly, okadaic acid has low mammalian toxicity and has become an important probe in the study of cellular regulation.

Paul J. Scheuer, Department of Chemistry, University of Hawaii at Manoa, Honolulu, HI 96822, U.S.A.; 12 April, 1993.